

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NORTH CAROLINA
SOUTHERN DIVISION

NO. _____

NATIONAL AUDUBON SOCIETY,

Plaintiff,

v.

THE UNITED STATES ARMY CORPS OF
ENGINEERS and COLONEL ROBERT J.
CLARK in his official capacity as DISTRICT
COMMANDER OF THE WILMINGTON
DISTRICT,

Defendants.

COMPLAINT

INTRODUCTION

In this case, the National Audubon Society challenges the United States Army Corps of Engineers' (the "Corps") approval of a permit that authorizes the Town of Ocean Isle Beach (the "Town") to build a 1,050-foot rock wall at the east end of Ocean Isle near Shallotte Inlet. It would extend from the dunes, across the beach, and into the ocean. The rock wall, a "terminal groin," is designed to protect buildings immediately west of the structure. As a result of stabilizing that small portion of beach, the groin will erode the beach east of the structure and destroy existing recreational beach and wildlife habitat. In studying the proposal, the Corps found that at least one alternative exists that would also protect the buildings, would cost the Town less money, and would require essentially the same level of long-term beach nourishment without building a destructive groin. That alternative would also maintain the beach and habitat

that would be lost with the groin. The U.S. Fish and Wildlife Service (“USFWS”), N.C. Wildlife Resources Commission (“NCWRC”), and U.S. Environmental Protection Agency (“EPA”) all opposed the terminal groin proposal because less destructive alternatives are available.

In rejecting alternatives to the groin, the Corps deferred to the Town’s consultants—who were hired by the Town to build a groin and hired by the Corps to evaluate alternatives. The Corps relied exclusively on the Town’s consultants to analyze the project. The foundational document for the Corps’ analysis, the modeling report and resulting engineering report, plainly states that its purpose was to support building the terminal groin. That other alternatives may be less damaging, less expensive, and equally protective was irrelevant. The Town decided years ago that the terminal groin was the solution to its problems, and its consultants delivered an analysis that refined that choice.

The intent to build a terminal groin is evident throughout the consultants’ analysis of potential alternatives. To estimate erosion, the consultants selected a ten-year period of erosion and assumed, without justification or precedent, that the same level of erosion would continue unabated for the next thirty years. The result of that error was that the environmental impact statement predicted twenty-three buildings would be destroyed by 2020 using current erosion management techniques. To date, none have been destroyed.

The consultants’ analysis further erred in relying on a model that both the consultants and the Corps concede cannot be used to predict shoreline changes or to quantify the effect of the alternatives. The model also failed to accurately predict past shoreline changes, based on known data, including the basic assessment of whether the shoreline would grow (accrete) or erode. Critically, the consultants’ modeling analysis omitted one of the two “action” alternatives to building the groin, a reflection of its inherent bias. Nonetheless, the Corps relied on the model to

predict future shorelines, calculate nourishment volumes and cost, and quantify environmental impacts.

Even with those errors, the results of the consultants and Corps' analysis still demonstrate that the only reason to build a terminal groin on Ocean Isle Beach is a desire to build a terminal groin. Compared to one alternative considered, the groin includes a much more substantial up-front investment by the Town, would cost the Town more over the long-term, and would not meaningfully reduce nourishment requirements. The terminal groin would also dramatically change the shoreline on the east end of the island, which is valued by both human and animal visitors to Ocean Isle Beach.

The effects of the proposed groin on the east end demonstrate that much is at stake; the terminal groin would permanently and fundamentally change the inlet by eliminating natural shoreline changes. Inlets are unique places for the people and animals that visit them. Audubon members visit the east end of the island to watch birds, experience nature, and escape the more developed parts of the beach. The birds that depend on the unique inlet habitat visit because it is the kind of habitat they require—they cannot make use of the more developed central reaches of the beach.

The National Audubon Society through its state program, Audubon North Carolina, (“Audubon”) brings this action challenging the Corps' approval of this harmful project and asks that this Court find that the Corps' alternatives analysis and approval of the terminal groin project were arbitrary and capricious and contrary to law.

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

1. This is an action under the Administrative Procedure Act (“APA”), 5 U.S.C. §§ 701 *et seq.*, challenging the Corps' issuance of a Record of Decision under the National

Environmental Policy Act (“NEPA”) and issuance of Permit SAW-2011-01241 allowing discharge of dredged or fill material pursuant to Section 404 of the Clean Water Act (“CWA”).

2. This action seeks a declaration that the NEPA documents and the Section 404 permit are arbitrary and capricious, an abuse of discretion or otherwise not in accordance with law, in violation of the Administrative Procedure Act, 5 U.S.C. § 706(2)(A). This action also seeks an order vacating and enjoining reliance on the NEPA documents and the Section 404 permit.

JURISDICTION AND VENUE

3. This action arises under NEPA, 42 U.S.C. §§ 4321 *et seq.*, and the CWA, 33 U.S.C. §§ 1251 *et seq.* This Court has jurisdiction pursuant to 28 U.S.C. § 1331 and may issue declaratory and further relief pursuant to 28 U.S.C. §§ 2201–02. Audubon is entitled to bring this action pursuant to the APA, 5 U.S.C. §§ 701–06.

4. Venue is proper in this Court pursuant to 28 U.S.C. § 1391(b)(2) because a substantial part of the events giving rise to Audubon’s claims occurred in this district.

PARTIES

5. The National Audubon Society’s state program is Audubon North Carolina, which has offices in Wilmington, Boone, Corolla, and Chapel Hill. Audubon North Carolina has 25,000 members and nine chapters throughout the state. Audubon works to conserve and restore North Carolina habitat for wildlife, with a particular focus on birds and bird habitat. The organization fulfills its mission by engaging in research and conservation projects, education and outreach, and advocacy. Audubon’s members study, observe, and photograph a variety of birds and use and enjoy their habitat for outdoor recreation and scientific study of various kinds, including nature study, photography, bird-watching, and a variety of other activities. Audubon brings this action on behalf of itself and its members.

6. Audubon has members that use and enjoy the areas subject to and affected by the terminal groin at issue in this case. Audubon members who live in Ocean Isle Beach regularly walk, bird-watch, and enjoy the natural setting on the east end of the island. It is the last natural, relatively undeveloped part of the island and is a refuge for beachgoers willing to walk to the inlet and for wildlife that depend on the unique habitat created by the dynamic shoreline. Audubon members, including members from other parts of the state, regularly visit the east end to watch and enjoy birds such as piping plovers, red knots, and numerous other species. Audubon and its members have participated and continue to participate in efforts to protect these species and their habitats. Audubon's members will continue to maintain an interest in these species and areas in the future. Additionally, Audubon and its members and staff have an interest in ensuring that the Corps complies with all applicable laws, including the substantive, procedural, and informational provisions of NEPA and the CWA.

7. Audubon's members are harmed by Defendants' actions, which will destroy habitat for threatened piping plovers and red knots as well as numerous other bird species. This harm will be redressed by an order from this Court setting aside the NEPA documents and Section 404 permit issued for the terminal groin.

8. Defendant Corps is an agency within the United States Department of Defense charged with regulating construction in the waters of the United States. The Wilmington District of the Corps is responsible for implementing Section 404 of the federal CWA in North Carolina and is headquartered in Wilmington, North Carolina.

9. Defendant Colonel Robert J. Clark is the current District Commander at the Wilmington District Office. The Wilmington District Commander was responsible for signing

the Record of Decision and issuing the permit being challenged. Colonel Clark is sued in his official capacity.

FACTUAL BACKGROUND

10. Ocean Isle Beach is a barrier island in southwest Brunswick County. The island spans approximately 5.6 miles west-to-east from Tubbs Inlet to Shallotte Inlet and 0.6 miles north-to-south from the Intracoastal Waterway to the Atlantic Ocean. Holden Beach, also a barrier island, lies to the east of Shallotte Inlet, which connects the Atlantic Ocean to the Intracoastal Waterway before joining Shallotte River.



Figure 1.

11. The Ocean Isle shoreline at Shallotte Inlet has always moved based on the alignment of the main channel in the inlet between Ocean Isle and Holden Beach. As the main channel moves closer to Holden Beach, the eastern end of Ocean Isle erodes. When the channel moves towards the middle of the inlet, both Ocean Isle and Holden Beach accrete.

12. That channel alignment can occur naturally or as a result of dredging. In 2001, the Corps dredged to create a middle channel, which resulted in added sand on both Ocean Isle and Holden Beach. This dredging corresponded with the initial federal beach nourishment project on the island.

13. Ocean Isle Beach and Holden Beach each demonstrate typical barrier island ecosystems. The project area includes 526 acres of salt marsh, 186 acres of upland hammock, 42 acres of intertidal flats and shoals, 159 acres of dunes, 114 acres of dry beach, and 63 acres of wet beach, as well as substantial marine habitat.

14. Ocean Isle Beach and Holden Beach include important habitat for birds and other wildlife, including several federally protected species.

15. The federally threatened piping plover, *Charadrius melodus*, is a small, sand-colored shorebird found along the beaches of the Atlantic Coast and the Great Lakes shores. North Carolina is one of the only states in which piping plovers may be found year round—during breeding, migration, and over the winter. Piping plover have been observed at both Ocean Isle Beach and Holden Beach, and the western end of Holden Beach has been designated as critical habitat for the species.

16. USFWS has identified key habitat characteristics necessary for piping plovers to thrive. These birds require dynamic, open sand flats, including broad sand spits at the end of barrier islands. Given the degree of coastal development over much of the piping plover's range,

inlet shorelines are often the only available habitat for feeding, roosting, nesting, and raising chicks.

17. The federally threatened red knot, *Calidris canutus*, has also been observed at Ocean Isle Beach and Holden Beach. The red knot is a medium-sized shorebird that migrates annually from breeding grounds in the Canadian Arctic to wintering grounds in the southeastern United States. Red knots are most common in North Carolina in April and May and from July to mid-October, although they can be found year round.

Terminal Groin Project

18. The Town proposes to build a terminal groin at the east end of Ocean Isle Beach adjacent to Shallotte Inlet to limit the natural changes in the shoreline. *See* Figure 1. Terminal groins operate by blocking the natural longshore transport of littoral drift — the sand that waves distribute across the beach. The proposed groin is intended to control erosion by trapping sand and dissipating wave energy. The stated purpose of the project is to reduce or mitigate erosion, provide long-term protection, maintain existing recreational resources, and protect existing natural resources.

19. The groin would extend 300 feet landward and 750 feet oceanward of the mean high water (“MHW”) mark, for a total of 1,050 feet. The 300-foot section landward of the MHW would be constructed with either concrete or steel sheet piles, and the 750-foot oceanward, “rubblemound” section would be constructed with loosely placed armor stone on top of a foundation mat. The rubblemound portion of the groin would cover approximately 52,500 square feet and would be installed from a temporary trestle or pier parallel to the groin.

20. A 3,214-foot “beach fillet” section of shoreline located directly west of the terminal groin would be filled with 264,000 cubic yards of sand dredged from Shallotte Inlet. The beach fillet would be nourished every five years with 400,000 cubic yards of sand.

The Administrative Process

21. In 2011, the Town began to pursue permits to construct a terminal groin. To do so, they hired Coastal Planning and Engineering of North Carolina, Inc. (“CPE”).

22. CPE later prepared a modeling analysis and engineering report for the Town, with the purpose to “refine the terminal groin’s design and develop a recommended plan which includes groin construction and strategic placement of beach fill.” Draft Environmental Impact Statement, App. C, at 2.

23. The Town then applied to the Corps for a Section 404 permit, and the Corps hired CPE as the third-party preparer of the Environmental Impact Statement (“EIS”). CPE simultaneously acted as the terminal groin design team for the Town and the entity tasked with evaluating alternatives to building the groin.

24. Although the Corps assembled a “Project Review Team” composed of various state and federal agencies to purportedly analyze the project, the team only met twice. Both meetings were held prior to the publication of the Draft and Final EIS prepared by CPE.

25. The Corps adopted CPE’s Engineering Report and Modeling Analysis as the foundation of the Draft EIS (“DEIS”). The Corps did not conduct any independent modeling analysis.

26. The Corps published the DEIS on January 23, 2015.

27. The DEIS identified five alternatives: Alternative 1 – “no action”; Alternative 2 – “abandon/retreat”; Alternative 3 – “beach fill only”; Alternative 4 – “Shallotte Inlet Bar Channel realignment with Beach Fill”; and Alternative 5 – the terminal groin.

28. To analyze each of these alternatives, the Corps relied on CPE’s use of a numerical model, the Delft3D model, to predict erosion rates and, indirectly, beach nourishment requirements. The model results were also used to evaluate environmental effects of the alternatives, though the approach differed significantly.

29. Comments on the DEIS were critical of the Corps and CPE’s analysis.

30. USFWS commented on March 12, 2015, stating its recommendation that “the proposed project not be authorized.” USFWS, Comment Letter on Public Notice of SAW-2011-01241 (Mar. 12, 2015); FEIS, App. G at 4.

31. USFWS noted that the proposed terminal groin would harm sea turtles, piping plovers, and red knots. The agency documented at length the numerous ways that construction of the groin would negatively impact these species, both directly and indirectly.

32. USFWS further noted its concern about the Corps’ assessment of the economic benefits of the groin, finding them to be overstated. USFWS explained that there was no rational basis for the arbitrary historical time period the Corps picked to project erosion rates into the future.

33. Audubon submitted comments critiquing the DEIS on March 13, 2015. In its comments, Audubon noted that a terminal groin installed in Fort Macon, North Carolina, was exacerbating erosion and causing severe financial harms, rather than benefits. Audubon also noted that much of the literature cited by the Corps was outdated and that a wealth of literature regarding the real world impacts of terminal groins was ignored entirely by those preparing the

DEIS. Audubon stressed the significant negative impacts that the terminal groin alternatives would have on wildlife, including piping plovers and red knots.

34. The North Carolina Coastal Federation (“Coastal Federation”) also submitted comments on March 16, 2015. The Coastal Federation raised concerns that there was no consistent, rational analysis of the different alternatives that would allow the public to compare their relative merits and allow the Corps to fulfill its responsibility to pick the Least Environmentally Damaging Practicable Alternative (“LEDPA”) pursuant to the CWA 404(b)(1) guidelines.

35. The Corps issued a Final EIS (“FEIS”) on April 29, 2016. Again, CPE was primarily responsible for drafting this document, including drafting responses to the comments submitted on the DEIS. The supporting documents maintained that the purpose of the analysis was “to develop a recommended plan which includes groin construction.” Final EIS, App. C, at 2.

36. The FEIS did not include a list of preparers nor identify who, if anyone, at the Corps was responsible for the independent review of CPE’s analysis.

37. The FEIS did not substantively change the DEIS analysis, with the exception of the analysis of Alternative 4, inlet management with nourishment, which had not been modeled for the DEIS and was not modeled for the FEIS. Instead, the FEIS combined parts of modeling for Alternatives 1 and 3 in a makeshift analysis of Alternative 4. Notably, the changes between the analyses of Alternative 4 in the DEIS and FEIS reduced the long-term beach nourishment demand to approximately that of the terminal groin alternative.

38. Audubon submitted comments on the FEIS on May 31, 2016. In its comments, Audubon reiterated concerns that the FEIS failed to cite applicable, recent scientific literature

regarding the impacts of terminal groins. Audubon highlighted the Corps' reliance on outdated, non-peer reviewed literature for its analysis of infauna, the small invertebrates that live in the sand and are prey for birds and other species.

39. Audubon explained that while the modeling report for Alternative 5 indicates a substantial loss of sediment, the FEIS incongruously asserts that there will be few impacts to infauna.

40. The Coastal Federation submitted comments on the FEIS on May 31, 2016. The Coastal Federation noted that the Corps had failed to correct the fundamental flaws of the DEIS and had provided no basis for fundamental assumptions underpinning its analysis.

41. USFWS submitted comments in a letter dated May 20, 2016, in which it continued to recommend that the project not be authorized due to its potential to adversely affect sea turtles, piping plovers, red knots, and sea beach amaranth.

42. USFWS noted that the FEIS failed to describe the 155 parcels supposedly threatened by erosion over the next thirty years and why those parcels will be threatened under Alternative 1, the continuation of current practices. Rather, USFWS noted that even under the Corps' own flawed analysis only eighty to ninety parcels appear to be threatened, most of which are undeveloped.

43. NCWRC stated its continued concerns about the project in a letter dated May 31, 2016. NCWRC noted its position that the project may adversely affect sea turtle nesting areas, shorebird foraging and nesting areas, and ingress and egress within the inlet of fishery resources.

44. NCWRC also noted concerns about the accuracy of the model and explained that the potential nourishment events would need to occur more frequently, further impacting inlet habitats and benthic invertebrate recruitment.

45. NCWRC noted that, despite assertions to the contrary in the FEIS, any expansion of the beach west of the terminal groin would be unlikely to increase water bird or shorebird habitat opportunities due to the influence of human activity.

46. The North Carolina Division of Coastal Management (“NCDCM”) submitted comments in a letter dated June 3, 2016. NCDCM stated that the FEIS presented information that conflicts with conditions that have actually been observed. For example, the FEIS predicted the loss of eleven homes by 2015, but those homes are still standing. The FEIS also included the assumption that the sandbags protecting certain properties would fail within five years, but that assumption has not been substantiated.

47. NCDCM also noted that the assessment of the environmental impacts of Alternatives 1-3 appear flawed and overstated.

48. On February 22, 2017, the Corps issued a Record of Decision (“ROD”) selecting Alternative 5, the terminal groin, as its preferred alternative and asserting that the alternative was permissible under the CWA. At the same time, the Corps issued Section 404 permit SAW-2011-01241 authorizing construction of the terminal groin.

49. In the ROD, the Corps stated that the terminal groin had been identified as the Least Environmentally Damaging Practicable Alternative (“LEDPA”) based on the project purpose, economic considerations, and the environmental impacts associated with all alternatives. The Corps asserted that all other practicable alternatives would result in more direct, indirect, and/or cumulative impacts to the aquatic ecosystem than would the groin.

50. The Corps asserted that Alternative 1, continuation of current practices, was not practicable because information in the FEIS predicted the alternative would result in shoreline

erosion affecting 155 parcels of land, forty-five of which have dwellings on them. As such, the Corps determined the alternative would not meet the stated purpose and need for the project.

51. The Corps similarly asserted that Alternative 2, cessation of all erosion control practices, was not practicable because information in the FEIS suggested that the alternative would result in the same level of erosion as Alternative 1. As such, the Corps determined the alternative would not meet the stated purpose and need for the project.

52. The Corps found that Alternative 3, beach nourishment, was practicable and would meet the project purpose and need. Nonetheless, the Corps rejected the alternative, finding that it would cost more over the long term than the applicant's preferred alternative. The Corps also stated that when compared to the applicant's preferred alternative, Alternative 3 would require more material to be placed along the shoreline for each nourishment event. The Corps stated that this increase in frequency in direct impacts would result in more cumulative impacts to the aquatic environment.

53. The Corps likewise determined Alternative 4, inlet management with beach nourishment, was practicable and would meet the project purpose and need. Nonetheless, the Corps rejected the alternative, finding that it would have a higher overall project cost than the terminal groin, when costs to the applicant, State, and federal governments were considered.

54. The Corps conceded in the ROD that even under its own analysis, Alternative 4 is less expensive for the Town than building the groin. When compared to the applicant's preferred alternative, less material would be placed on the shoreline in each nourishment event under Alternative 4. The Corps stated, however, that Alternative 4 would increase direct and cumulative impacts to the aquatic environment more than Alternative 5 because nourishment would need to occur every four years. As such, the Corps rejected the alternative.

55. The Corps concluded that under Alternative 4 nourishment would be required every four years, rather than every five years with Alternative 5, because nourishment every five years would require too much sand to be placed at one time. The Corps reached that conclusion because nourishing every five years would require 420,000 cubic yards of sand. This amount is slightly more than the limit that the Engineering Report states “was arbitrarily set as a maximum nourishment volume per operation in evaluation of all of the alternatives that include beach fill.” FEIS, App. B, at 43.

56. Historically, four of the five nourishment projects conducted on Ocean Isle Beach since 2001 have included more than 420,000 cubic yards of sand, including nourishment events up to 1,866,000 cubic yards.

57. Alternative 5, the terminal groin, was selected as the LEDPA, primarily on the basis that beach nourishment would only be required every five years.

58. In the ROD, the Corps noted that the terminal groin may increase erosion along the easternmost point of Ocean Isle Beach.

59. On March 7, 2017, notice of the ROD and permit was published in the Federal Register.

The Corps’ Analysis

60. Three parts of the Corps’ analysis in the FEIS and ROD are particularly relevant in this case. First, the Corps’ prediction of future erosion rates used in Alternatives 1 and 2; second, the Corps’ reliance on the Delft3D model for both economic and environmental analyses, which relied on different sets of erosion rates; and third, the Corps’ analysis of environmental effects and alternatives under the CWA and the 404(b)(1) guidelines.

61. The Corps conducted two sets of distinct analyses for each alternative. First, it looked at the economic cost of erosion of the shoreline, then considered the environmental effect of each alternative using a different erosion estimate and a different shoreline. For each alternative, the Corps relied on a hodgepodge of different methodologies to project these different impacts into the future for each alternative.

The Erosion Estimate for the Economic Analysis

62. To analyze Alternatives 1 and 2, essentially the “no-action” alternatives, the Corps did not rely on modeling as it did for other alternatives.¹ Instead, the Corps (relying on the analysis of the consultant CPE) selected the time period from between 1999 and 2010 to serve as the standard erosion rate.² The Corps then assumed, without explanation, that the erosion would continue unabated at that rate for the next thirty years.

63. Based on that analysis, the Corps predicted a very high level of erosion in the baseline condition. Indeed, the Corps concluded that if no new shoreline management was put in place, twenty-three structures would be lost by 2020.

64. Between 2001 and 2015, six houses were lost on Ocean Isle. Under a similar time frame, using the same minimal erosion control techniques, the baseline analysis technique estimated that thirty-six houses would be lost.

65. Alternative 2, which does not include use of sandbags or other erosion control techniques as under Alternative 1, was found to have identical effects with minor variations in the timing of property loss.

¹ Alternative 1 was modeled, but was only used as the baseline for analyzing model results for other alternatives. Alternative 2 was not modeled.

² In the shoreline monitoring report, however, the Corps analyzed erosion data going back to 1938, which resulted in much lower average erosion rates and accretion in some locations.

The Delft3D Model

66. The Corps' analysis primarily relied on CPE's Delft3D model results. The Delft3D model could not, as acknowledged repeatedly in the FEIS, provide any prediction about what changes to expect in the future under any of the alternatives. The FEIS conceded, in fact, that the model is not appropriate for quantitative analysis due to errors and limitations.

67. CPE's modeling analysis acknowledged that the Delft3D model erred in important ways. The model predicted that sediment transport along much of Ocean Isle Beach would move from west to east. In reality, sediment transport along the beach was primarily from east to west.

68. When calibrated based on observed short-term shoreline changes, the Delft3D model failed to come close to a realistic prediction of the patterns and degree of erosion that actually occurred on important parts of the island.

69. The model did not err consistently. In some areas of the island the model's prediction was close to the observed changes. For other areas, including some most vulnerable to erosion, the model erred significantly. On Ocean Isle Beach, the model both overestimated and underestimated erosion.

70. Yet, as described below, the Corps relied on the Delft3D model to quantify erosion volumes, nourishment demands, costs, and habitat changes resulting from shoreline change (to the tenth of an acre).

71. CPE modeled Alternative 1, Alternative 3, and Alternative 5. Results for Alternative 1 were only used as a baseline for predicting erosion rates under other alternatives and not to evaluate the economic effects of Alternatives 1 or 2.

72. The Corps did not require CPE to model Alternative 4, Shallotte Inlet Channel Realignment with Beach Fill.³ The agency's failure to model Alternative 4 was raised in comments, yet the FEIS did not include a modeling analysis of the alternative. Alternative 4 is the only alternative that included focused channel dredging and beach nourishment and would cost the Town less than the proposed terminal groin.

73. Rather than model Alternative 4, CPE and the Corps inexplicably relied on modeling of Alternatives 1 (which did not include beach nourishment) and 3 (which did not include targeted channel dredging). The Corps never evaluated an alternative close to what is proposed under Alternative 4.

74. Beyond using the Delft3D model to quantify erosion volumes, future nourishment needs, costs, and habitat changes and failing to model one of the alternatives, the Corps erred in using the model results in fundamentally different ways in order to evaluate the economic and environmental effects.

75. For the economic analysis, the Corps rejected the erosion rates and shoreline projections produced by the model and instead manipulated the model results to nearly quadruple the modeled erosion rate. In the analysis of environmental effects, however, the Corps accepted the modeled erosion rates and the model-produced shorelines to quantify habitat changes. In sum, the Corps evaluated two different shorelines for each alternative—one based on the manipulated results for its economic analysis and one based on the modeled results for its environmental analysis. Taking these two different approaches resulted in the economic costs of not building the groin appear greater, and the environmental harm from building the groin appear less severe, in comparison to the other alternatives.

³ CPE also omitted modeling for Alternative 2, relying instead on Alternative 1 modeling.

76. Despite the model's failure to provide any realistic, consistent results, the Corps nonetheless relied on the model to quantify and compare predicted erosion effects, nourishment demands, and costs for Alternatives 3, 4, and 5. Throughout the analysis, the Corps maintained that the modeling results themselves did not accurately assess the amount of erosion or accretion for any alternative. Yet the FEIS quantified future erosion, nourishment demands, and costs of Alternatives 3, 4, and 5 based on the proportional increase or decrease in erosion as compared to Alternative 1 model results. The Corps assumed, without support, that changes in the "real world" would be proportionally the same as in the model.

77. To estimate the future erosion rate and the related nourishment demands and costs of the alternatives—the economic impacts—the Corps rejected the model output and instead assumed that in the baseline condition, Alternative 1, the beach would experience erosion nearly four times greater than predicted by the model. The Corps then evaluated the proportional increase or decrease in erosion for Alternatives 3, 4, and 5 as compared to the modeled erosion rate for Alternative 1. Last, the Corps assumed that the proportional change in the modeled erosion rate would correspond to a change in the erosion rate in the real world.

78. The Corps did not explain the basis for concluding that the model underestimated erosion so substantially. Nor did it address calibration results that showed that observed erosion rates were, at most, double the modeled rates in some locations and less than model results at other locations. Notably, the Corps did not use the same approach of manipulating the model results in its NEPA documents analyzing a similar terminal groin project at Figure 8 Island, near Wilmington, North Carolina.

79. For its environmental analysis, the Corps made an entirely different use of the model results. To evaluate environmental effects, the Corps accepted the modeled shoreline

changes produced by the Delft3D model without manipulation. It used the modeled shorelines to identify the acreage of different habitats and to evaluate the change in those habitats over the length of the model simulation, in most cases a three-year analysis. The FEIS then quantified the change in habitat, down to the tenth of an acre in some instances.

80. In addition, the Corps limited its analysis of indirect environmental effects to just two to five years as compared with its economic analysis, which looked out thirty years.

81. As a result of these analyses, CPE and the Corps have developed at least three shoreline change scenarios. Alternatives 1 and 2 were evaluated based on CPE's continued erosion estimate and the Delft3D model results as produced. Alternatives 3, 4, and 5 were evaluated under both the Delft3D model results as produced (environmental effects) as well as the manipulated results (erosion rates, nourishment needs, and cost). Each analysis used a different timeframe. No explanation was given as to why the Corps engaged in these divergent analyses to study the same fundamental issue: how and when the shoreline is likely to change under different alternative scenarios.

The Clean Water Act-404(b)(1) Guidelines Analysis

82. The proposed terminal groin will have significant environmental effects. First, the groin will permanently eliminate habitat within the footprint of the structure. Second, the groin will require ongoing beach nourishment, which affects habitat at both the dredge and discharge sites. Finally, because the groin will disrupt natural shoreline changes, the sand spit at the east end of Ocean Isle Beach will erode.

83. The FEIS and ROD recognized that only the terminal groin proposal results in the permanent, complete elimination of habitat. Species living within the footprint of the groin will be crushed or permanently displaced.

84. Like the other action alternatives, the terminal groin proposal includes significant dredging and beach nourishment, which will affect infauna.

85. The terminal groin proposal would also result in the long-term erosion of the sand spit on the east end of Ocean Isle Beach—eliminating habitat essential to birds that feed, roost, and nest there. The FEIS and Section 404 permit conceded that shorebirds such as piping plover and red knot depend on the dynamic inlet shoreline and habitat created by overwash. The terminal groin's entire purpose is to stabilize the shoreline, preventing those dynamic processes and eliminating the necessary habitat.

86. USFWS has made clear that the terminal groin has the potential to affect breeding, migrating, and wintering piping plovers as well as red knots through: (1) the direct loss of foraging and roosting habitat in the Action Area and in the updrift and downdrift portions of the beach; (2) degradation of foraging habitat and destruction of the prey base from sand disposal; and (3) the attraction of predators due to food waste from the construction crew. USFWS also noted that the stabilization of the shoreline may result in less suitable nesting habitat for the piping plover and other nesting shorebirds.

87. USFWS also commented that the creation of the beach fillet will impair the ability of the shoreline to respond naturally to the construction of the terminal groin, thereby reducing the amount of recovery habitat for both piping plovers and red knots.

88. Finally, the FEIS and ROD acknowledged that the construction of a terminal groin at Pea Island eliminated piping plover habitat. As the shoreline was stabilized, plants grew that destroyed available habitat. A similar result is expected if Ocean Isle Beach is stabilized with a terminal groin.

LEGAL BACKGROUND

National Environmental Policy Act

89. The National Environmental Policy Act of 1969 (“NEPA”) requires federal agencies to prepare or adopt an EIS before undertaking a major action that will significantly affect the quality of the human environment. 42 U.S.C. § 4332(2)(C).

90. An EIS serves three primary functions. First, it ensures that an agency will take a hard look at the direct, indirect, and cumulative environmental impacts of a proposed action. Second, it guarantees that the agency will consider a range of reasonable alternatives to accomplish the underlying goals of the proposed action—including options that may have fewer adverse impacts on the environment—before deciding whether to undertake the project as originally proposed. Finally, the EIS also provides detailed information about the proposed action, its impacts, and reasonable alternatives to the public and other agencies, so that they may be informed participants in the decision-making process.

91. To implement the requirements of NEPA, the Council on Environmental Quality has promulgated regulations applicable to all federal agencies. *See* 40 C.F.R. §§ 1500-1508.

92. NEPA requires that an EIS contain a statement of purpose and need for the proposed action which “shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” 40 C.F.R. § 1502.13.

93. NEPA requires an agency to include in an EIS a “detailed statement” on “alternatives to the proposed action.” 42 U.S.C. § 4332(2)(C)(iii). In this statement, the agency must rigorously explore and objectively evaluate all reasonable alternatives that could achieve the underlying project purpose. 40 C.F.R. § 1502.14(a). This alternatives analysis is “the heart of

the environmental impact statement,” and should “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.” 40 C.F.R.

§ 1502.14.

94. Agencies must “[d]evote substantial treatment to each alternative considered in detail, including the proposed action, so that reviewers may evaluate their comparative merits.” 40 C.F.R. § 1502.14(b). Only those alternatives that are deemed to be unreasonable can be eliminated from the study. 40 C.F.R. § 1502.14(a).

95. NEPA further requires that every EIS be prepared with objective good faith and fully and fairly discuss, among other things, the adverse environmental effects of the proposed action and the alternatives to the proposed action which may avoid or minimize these adverse effects. 42 U.S.C. § 4332(2)(C), (E).

96. NEPA requires that any agency preparing an EIS “shall insure the professional integrity, including scientific integrity, of the discussions and analyses” in the EIS. 40 C.F.R. § 1502.24.

97. NEPA also requires that, if in the course of evaluating reasonably foreseeable significant adverse effects in an EIS there is “incomplete or unavailable information,” the agency preparing the EIS “shall always make clear that such information is lacking.” 40 C.F.R. § 1502.22. “If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.” 40 C.F.R. § 1502.22(a). Alternatively, the agency must explain that the information is incomplete, unavailable, or exorbitantly expensive. *Id.* § 1502.22(b).

98. Where an agency relies on the applicant to submit environmental information for the EIS, the agency “shall independently evaluate the information submitted and shall be responsible for its accuracy. . . .” 40 C.F.R. § 1506.5(a).

99. NEPA requires that “[t]o the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies” required by other environmental review laws and executive orders. 40 C.F.R. § 1502.25(a).

100. The “effects” that must be discussed in the EIS include, among other considerations, the direct environmental impacts of the proposed action, the indirect effects of the proposed action, and the cumulative impacts of the proposed action. *Id.* §§ 1502.16(a)–(h); 40 C.F.R. § 1508.7.

101. The NEPA regulations define “indirect effects” as effects “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Further, indirect effects may include “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” *Id.*

102. The NEPA regulations define “cumulative impact” as the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” *Id.* § 1508.7.

103. The purpose of the NEPA documents is to “serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” *Id.* § 1502.2(g). To this end, NEPA requires that information be made available to “public officials and citizens before decisions are made and before actions are taken.” 40 C.F.R. § 1500.1(b).

104. NEPA requires that an agency preparing a FEIS “shall assess and consider comments” on the DEIS and “shall respond” to those comments in one of several specified ways, including making requested modifications, corrections, and supplementations. 40 C.F.R. § 1503.4(a). If the agency decides the comments do not warrant further agency response, it must so declare, “cit[ing] the sources, authorities, or reasons which support the agency’s position.” *Id.* § 1503.4(a)(5).

105. As such, NEPA prohibits an agency from “commit[ting] resources prejudicing selection of alternatives before making a final decision.” 40 C.F.R. § 1502.2(f).

106. Corps regulations state that “the district engineer should document in the record the Corps independent evaluation of the information and its accuracy.” 33 C.F.R. pt. 325 app. B 8(f)(2).

107. When an agency does choose to “use the information submitted by the applicant in the environmental impact statement, either directly or by reference, then the names of the persons responsible for the independent evaluation shall be included in the list of preparers.” 40 C.F.R. § 1506.5(a).

Clean Water Act

108. In 1972, Congress passed the Clean Water Act (“CWA”) “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” 33 U.S.C. § 1251(a).

109. Section 404 of the CWA authorizes the Secretary of the Army to issue permits for the discharge of dredged or fill material into “navigable waters” when certain conditions are met. 33 U.S.C. § 1344. The Section 404 permitting program is administered by the Corps, with ultimate authority for the program residing with the EPA. *Id.*

110. The term “navigable waters” means “waters of the United States.” 33 U.S.C. § 1362(7). The term “waters of the United States” includes wetlands. 33 C.F.R. § 328.3(a). The definition of “wetlands” used by the Corps and EPA is as follows: “The term ‘wetlands’ means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas.” *Id.* § 328.3(b); 40 C.F.R. § 232.2(r).

111. Unless exempted by Section 404(f)(1), all discharges of dredged or fill material into waters of the United States, including wetlands, must be authorized under a Section 404 permit issued by the Corps. 33 U.S.C. § 1344.

112. The Corps adopted regulations, known as the “public interest” factors, to implement its permitting authority. 33 C.F.R. pt. 320. “Evaluation of the probable impact which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so, the conditions under which it will be allowed to occur, are therefore determined by the outcome of this general balancing process.” *Id.* § 320.4(a)(1).

113. The Corps must consider a broad range of potential relevant impacts as part of its public interest review, including “conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.” *Id.*

114. In addition, the EPA promulgated regulations, known as the “404(b)(1) Guidelines,” for Section 404 permits. 33 U.S.C. § 1344(b)(1); 40 C.F.R. pt. 230. The Corps reviews all proposed Section 404 permits under both the Corps’ public interest factors and EPA’s 404(b)(1) Guidelines. 33 U.S.C. § 1344(b)(1); 33 C.F.R. § 320.2(f). A permit must be denied if it is contrary to the public interest or does not comport with the Section 404(b)(1) Guidelines. 33 C.F.R. §§ 320.4(a)(1), 323.6(a); 40 C.F.R. §§ 230.10, 230.12.

115. To ensure these mandatory CWA requirements are satisfied, the Corps must fully evaluate the direct, secondary, and cumulative impacts of the activity, including impacts to endangered species, the aquatic environment, fish and wildlife, and human impacts. *See, e.g.*, 33 C.F.R. §§ 320.4(a)(1); *id.* § 336.1(c)(5) (endangered species); *id.* § 336.1(c)(8) (fish and wildlife); 40 C.F.R. §§ 230.11, 230.20-23 (aquatic ecosystem); *id.* § 230.30 (threatened and endangered species); *id.* § 230.31 (fish and aquatic organisms); *id.* § 230.51 (recreational and commercial fisheries); *id.* § 230.52 (water-related recreation); *id.* § 230.53 (aesthetics).

116. The 404(b)(1) Guidelines also set forth particular restrictions on discharges. 40 C.F.R. §§ 230.10, 230.12. The Corps must set forth its findings in writing on the short-term and long-term effects of the discharge of dredge or fill activities, as well as compliance or noncompliance with the restrictions on discharge. *Id.* §§ 230.11, 230.12(b).

117. The “loss of values” that the Corps must consider in evaluating the impact of a discharge on the biological characteristics of an aquatic ecosystem includes, with respect to threatened and endangered species, “[t]he impairment or destruction of habitat to which these species are limited. Elements of the aquatic habitat . . . include adequate good quality water, spawning and maturation areas, nesting areas, protective cover, adequate and reliable food supply, and resting areas for migratory species.” Each of these elements “can be adversely affected by changes in either the normal water conditions for clarity, chemical content, nutrient balance, dissolved oxygen, pH, temperature, salinity, current patterns, circulation and fluctuation, or the physical removal of habitat.” *Id.* § 230.30(b)(2).

118. The Corps must also evaluate whether the discharge could kill individuals of an endangered or threatened species. *Id.* § 230.30(b)(1).

119. EPA’s 404(b)(1) guidelines prohibit the Corps from authorizing an application for dredge and fill activities if, inter alia, there is a practicable alternative which would have less adverse impact and does not have other significant adverse environmental consequences. 40 C.F.R. §§ 230.10(a), 230.12(a)(3)(i). The Corps must document its findings of compliance or noncompliance with these restrictions. *Id.* § 230.12(b).

120. Practicable alternatives are those alternatives that are “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” *Id.* § 230.10(a)(2).

121. “Fundamental to [404(b)(1)] Guidelines is the precept that dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated that such a discharge will not have an unacceptable adverse impact either individually or in combination

with known and/or probable impacts of other activities affecting the ecosystems of concern.”

Id. § 230.1(c).

122. The burden of proof to demonstrate compliance with the 404(b)(1) Guidelines rests with the applicant. *Id.*; *Utahns for Better Transp. v. U.S. Dep’t of Transp.*, 305 F.3d 1152, 1187 (10th Cir. 2002). The Corps must deny a permit where the proposed discharge fails to comply with the Guidelines or where there is insufficient information to determine compliance. 40 C.F.R §§ 230.10, 230.12(a)(3)(iv).

123. The Corps’ decision to authorize dredge or fill activities governed by section 404 requires submission of an environmental assessment or EIS pursuant to NEPA. 33 C.F.R. § 325.2(a)(4). The Corps must comply with the requirements of 33 C.F.R. § 325 app. B with respect to the environmental procedures and documentation required by NEPA. *Id.*

124. Because NEPA does not contain an internal citizen suit provision, the APA governs the scope and standard of review of Audubon’s NEPA claim against the Corps. The APA confers a right of judicial review on any person adversely affected by final agency action, and provides for a waiver of the federal government’s sovereign immunity. 5 U.S.C. § 702.

125. Although the CWA does contain a citizen suit provision, that provision does not govern suits brought to challenge a permitting decision made by the Corps in its capacity as a regulatory entity authorizing a discharge under Section 404. *See* 33 U.S.C. § 1365(a). Consequently, the APA also governs the scope and standard of review for Audubon’s CWA claim against the Corps.

126. Upon review of agency action under the APA, the court shall “hold unlawful and set aside actions . . . found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.” 5 U.S.C. § 706(2)(A). An action is arbitrary and capricious “if the

agency has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

FIRST CLAIM FOR RELIEF

The Corps violated NEPA by conducting an arbitrary and capricious analysis of alternatives.

127. Audubon realleges, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

128. NEPA requires an agency to include in an EIS a “detailed statement” of “alternatives to the proposed action.” 42 U.S.C. § 4332(2)(C)(iii). In this statement, the agency must “[r]igorously explore and objectively evaluate all reasonable alternatives that could achieve the underlying project purpose.” 40 C.F.R. § 1502.14(a).

129. The purpose of a NEPA analysis is to “serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.” *Id.* § 1502.2(g).

130. The Corps failed to objectively evaluate the comparative merits of different alternatives in the following ways:

- a. The Corps relied on the Delft3D model to predict and quantify future erosion rates, nourishment needs, and costs associated with some alternatives despite acknowledging that the model could not be used to predict or quantify shoreline change under any alternative.

- b. The Corps used two entirely separate methodologies to compare the environmental and economic effects of each alternative, leaving decisionmakers and the public with no way to objectively evaluate the true impacts of the alternatives.
- c. In its economic analysis, the Corps relied on the unsupported assumption that changes predicted by the Delft3D model for each alternative would correspond proportionally to changes in the real world.
- d. The Corps relied on CPE's selection of a 10-year period of erosion as the baseline condition without justification in light of more extensive data.

SECOND CLAIM FOR RELIEF

The Corps violated NEPA by failing to include information that was essential to a reasoned choice among alternatives.

131. Audubon realleges, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

132. NEPA requires agencies to include information about impacts to the human environment that is "essential to a reasoned choice among alternatives" unless that information is unavailable or exorbitantly costly. 40 C.F.R. § 1502.22(a).

133. If an agency is unable to obtain such information because the costs of obtaining it are exorbitant or because the means of obtaining it are unknown, the agency must include a statement explaining that such information is unavailable or exorbitantly costly in the EIS. *Id.* § 1502.22(b).

134. The NEPA regulations require an analysis of "indirect effects," which are defined as those "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8(b).

135. The Corps failed to disclose information essential to a reasoned choice without an adequate rationale in the following ways:

- a. The Corps relied on the Delft3D model as the principal tool to evaluate alternatives, but it did not model Alternative 4, one of the three action alternatives. The Corps did not include any information in the EIS stating that it was impossible or exorbitantly expensive to model Alternative 4. In so doing the Corps violated NEPA.
- b. The Corps failed to evaluate the indirect effects of the alternatives over the 30-year life of the project.
- c. The Corps failed to provide information to support or explain the conclusion that under Alternative 1, 155 parcels will be threatened by erosion over the next thirty years.

136. By failing to include this key information about impacts to the human environment that is essential to a reasoned choice among alternatives, the Corps violated NEPA.

THIRD CLAIM FOR RELIEF

The Corps failed to evaluate secondary effects of the groin over the life of the project.

137. Audubon realleges, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

138. The Corps is obligated to evaluate secondary effects as part of the 404(b)(1) Guidelines analysis. 40. C.F.R. § 230.11(h).

139. The Corps violated the 404(b)(1) Guidelines and the Clean Water Act by failing to evaluate the secondary effects of the alternatives for the life of the project.

FOURTH CLAIM FOR RELIEF

The Corps violated the CWA by selecting an alternative that is not the “Least Environmentally Damaging Practicable Alternative.”

140. Audubon realleges, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

141. The Corps is prohibited from authorizing an application for dredge and fill activities if there is a practicable alternative which would have a less adverse impact and does not have other significant adverse environmental consequences. 40 C.F.R. §§ 230.10(a), 230.12(a)(3)(i).

142. Practicable alternatives are those alternatives that are “available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.” *Id.* § 230.10(a)(2).

143. The Corps’ selection of Alternative 5, the terminal groin, as the LEDPA was based on two findings. First, that the terminal groin would provide better long-term bird habitat for species dependent on the inlet shoreline. Second, that the scope of effects from dredging and beach nourishment make the terminal groin preferable to other alternatives. Even if the arbitrary and capricious analysis of alternatives were valid, the terminal groin is not the LEDPA.

144. The Corps’ LEDPA determination is arbitrary and capricious and a violation of the APA and the CWA for the following reasons:

- a. The terminal groin is unquestionably worse for native, inlet-dependent birds than practicable, non-groin alternatives—as demonstrated by federal and state expert agency opposition to the project.
- b. Under the Corps’ analysis, the terminal groin and inlet management alternatives have insignificant long-term differences in annual nourishment volumes. The only

difference is the interval between nourishment events, which was based on a “maximum nourishment volume” that was arbitrarily set. Therefore, the agency’s finding that the terminal groin alternative causes less environmental damage related to dredging and nourishment impacts has no basis.

- c. The Corps has demonstrated that several alternatives are “practicable,” yet unlawfully relied on costs to eliminate less damaging alternatives.

FIFTH CLAIM FOR RELIEF

The Corps failed to independently verify and evaluate the data and analysis in the EIS.

145. Audubon realleges, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

146. NEPA requires an agency responsible for preparation of an EIS to “independently evaluate” environmental information submitted by a project applicant. 40 C.F.R. § 1506.5(a). The federal agency is responsible for the accuracy of the information. *Id.*

147. The Corps violated NEPA when it failed to independently verify and evaluate the information submitted by CPE, which was submitted for the purpose of advancing the proposed terminal groin alternative.

PRAYER FOR RELIEF

WHEREFORE, Audubon respectfully request that this Court:

- A. Declare the Corps’ DEIS, FEIS, ROD, and Section 404 permit as arbitrary and capricious pursuant to the APA, 5 U.S.C. § 706(2)(A), and contrary to NEPA and the CWA;
- B. Enjoin reliance on and vacate the Corps’ NEPA documents and Section 404 permit;

- C. Require removal of any portion of the proposed terminal groin built during this litigation and restoration of any affected shoreline;
- D. Award Audubon the costs of this action, including their reasonable attorneys' fees; and
- E. Grant Audubon such additional relief as the Court deems just and proper.

Respectfully submitted, this 14th day of August, 2017.

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